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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,198	08/19/2002	Gurudas Samant	Metal 1287-WCG	9196

7590 08/25/2004
William C Gerstenzang
Norris McLaughlin & Marcus
220 East 42nd Street
New York, NY 10017

EXAMINER

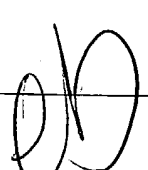
STRICKLAND, JONAS N

ART UNIT PAPER NUMBER

1754

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/030,198	SAMANT ET AL.	
	Examiner	Art Unit	
	Jonas N. Strickland	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 13-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-12 in the reply filed on 7/08/2004 is acknowledged. The traversal is on the ground(s) that the claims have the same inventive concept. This is not found persuasive because the claims lack the same or corresponding special technical feature, such as the reaction conditions of the reactor, the presence of oxides, carbonates, hydroxides of calcium, magnesium, sodium, and potassium, as well as the operating conditions of the Froude number.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 4-12 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 4-12 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent

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protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 2 recites the broad recitation "more than 0.5 wt-%", and the claim also recites, "preferably 2-8 wt-%", which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (US Patent 4,221,768) in view of Graf et al. (US Patent 4,810,478).

Inoue et al. discloses a catalyst for purifying exhaust and waste gases in the temperature range from 150° to 500°C, using reducing agents such as ammonia (col. 5, lines 23-48). Inoue et al. continues to disclose having a catalyst having any desired shape, such as a honeycomb (col. 5, lines 19-22). The catalyst has a structure of 160 mm in lateral side, 160 mm in vertical side and 450 mm in length and an intercell distance of 5 mm (col. 13, lines 9-12). Inoue et al. continues to disclose wherein the reactor may also comprise oxides of alkali metals and alkaline metals (see abstract, section C). Therefore, it would have been obvious to one of ordinary skill in the art to add oxides of calcium, magnesium, sodium, and potassium. However, Inoue et al. does not disclose the operating conditions of the gas flow in the free reaction space adjusting to the Froude numbers.

However, Graf et al. discloses a process for removing sulfur oxides and optionally other gaseous pollutants from flue gases by means of a reactant such as sodium, potassium, calcium and/or magnesium as an oxide, hydroxide, or carbonate (see abstract). Graf et al. continues to teach wherein the process may also treat nitrogen oxides and wherein the reactor is controlled according to the Froude number (col. 3, line 50 – col. 4, line 18).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Inoue et al., based on the teachings of Graf et al., by using reactants such as sodium, potassium, calcium and/or magnesium, as well as to operate the gas flow, according to the Froude number, because Graf et al. teaches a process for treating gaseous pollutants, such as nitrogen oxides and sulfur oxides using reactants such as sodium, potassium, calcium and/or magnesium, as well as to operate the gas flow, according to the Froude number. Such modification would have been obvious to one of ordinary skill in the art, because one of ordinary skill in the art would have expected a process, which treats gases comprising nitrogen oxides and sulfur oxides as taught by Graf et al. to be similarly useful and applicable to a process for treating nitrogen oxides and sulfur oxides as taught by Inoue, which also teaches using alkali metals.

With respect to the flow passage of the catalyst being more than 50%, it would have been obvious to one of ordinary skill in the art to achieve this percentage based on Inoue et al., which teaches a similar honeycomb catalyst used for treating exhaust gases, comprised of titanium dioxide, tungsten, and vanadium pentoxide of from 1-70%,

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and alkali and alkaline metals, (see abstract and examples), and having an intercell diameter of 5 mm. With respect to claim 3, Graf et al. teaches adding calcium oxide having a particle size of 7.5 microns (col. 7, lines 5-7).


Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USP 6210625; USP 6161378; USP 4891348.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonas N. Strickland whose telephone number is 571-272-1359. The examiner can normally be reached on M-TH, 7:30-5:00, off 1st Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jonas N. Strickland
August 18, 2004


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